Amendments to the Claims:

Claims 1-7 (Cancelled)

8. (Original) A semiconductor device (10) comprising:

a semiconductor substrate (12) having a first surface and a second surface and a first conductivity type;

at least one epitaxial layer (14) on said first surface of said semiconductor substrate (12), said epitaxial layer formed of a material with a dissociation temperature below that of the semiconductor substrate;

a zone (16) of increased carrier concentration in said semiconductor substrate (12) and extending from said second surface of said semiconductor material toward said first surface; and

a layer of metal (18) deposited on said second surface of said semiconductor substrate (12) that forms an ohmic contact at the interface (20) of said metal and said zone (16) of increased carrier concentration.

9. (Original) A semiconductor device according to claim 8 wherein the semiconductor substrate (12) is silicon carbide.

10. (Original) A semiconductor device according to claim 8 wherein the implanted dopant material is selected from the group consisting of nitrogen, aluminum, arsenic, phosphorous, boron and gallium.

11. (Original) A semiconductor device according to claim 9 wherein the initial carrier concentration in the silicon carbide is between $1x10^{15}$ to $1x10^{19}$ $cm^{-3}$.

12. (Original) A semiconductor device according to claim 11 wherein the carrier concentration in the zone of increased carrier concentration (16) is between $1x10^{18}$ and $1x10^{20}$ $cm^{-3}$ and is greater than the initial carrier concentration in the silicon carbide.

13. (Original) A semiconductor device according to claim 8 wherein said epitaxial layers (14) are selected from the group consisting of gallium nitride, aluminum gallium nitride; indium gallium nitride; and oxides of silicon, gallium, aluminum and indium.

14. (Original) A semiconductor device according to claim 9 wherein said metal (18) is selected from the group comprising nickel, palladium, platinum, aluminum and titanium.

15. (Original) A semiconductor device (10) comprising:

a silicon carbide substrate (12) having a first surface and a second surface and an initial concentration of dopant imparting an initial conductivity type;

at least one epitaxial layer (14) on said first surface of silicon carbide substrate (12);

a zone of increased carrier concentration (16) in said silicon carbide substrate (12) and extending from said second surface of said silicon carbide substrate (12) toward said first surface, said zone of dopant material (16) being characterized by a concentration of dopant that progressively decreases from said second surface toward said first surface; and

a nickel ohmic contact (18) on said second surface of said silicon carbide substrate (12).

16. (Original) A semiconductor device according to claim 15 wherein the implanted dopant material is selected from the group consisting of nitrogen, aluminum, arsenic, phosphorous, boron and gallium.

17. (Original) A semiconductor device according to claim 15 wherein the initial carrier concentration in the silicon carbide is between $1x10^{15}$ to $1x10^{19}$ $cm^{-3}$.

18. (Original) A semiconductor device according to claim 17 wherein the carrier concentration in the zone of increased carrier concentration is between $1x10^{18}$ and $1x10^{20}$ $cm^{-3}$ and is greater than the initial carrier concentration in the silicon carbide.

19. (Original) A semiconductor device according to claim 15 wherein said epitaxial layers (14) are selected from the group consisting of gallium nitride; aluminum gallium nitride; indium gallium nitride; and oxides of silicon, gallium, aluminum and indium.

20. (Original) A semiconductor device according to claim 15 wherein the semiconductor device is a vertical device.

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Respectfully submitted,

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